Laboratory for Physical Sciences at the University of Maryland.

"'Quantum state' is a mathematical representation," says Brower-Thomas, "but it's based upon a physical system—that could be an atom, it could be a trapped ion, for example—but even to get to the quantum state you have to consider the material."

What Brower-Thomas and Richardson both point out is the importance of bringing in the language of various disciplines in order to develop key concepts for quantum information. "My work at MRS as part of the quantum staging group was also helpful at the workshop," Richardson says. "In the MRS quantum staging group we are focused on creating a community at MRS for researchers working in materials for QIS [quantum information science] and quantum materials. This experience was also helpful at the workshop because it has provided opportunities for me to discuss QIS concepts with a broad range of materials researchers. These discussions have helped me understand how non-QIS experts build their understanding of QIS concepts."

By bringing in the range of disciplines involved when developing the key concepts, says Brower-Thomas, "high-school teachers keep in mind how diverse the field is."

"We don't want to lose anyone," she says. "We don't want to lose people who are chemists, engineers, physicists; we want everyone who has an interest in STEM [science, technology, engineering, and mathematics] from different backgrounds to see themselves in these terms, in these ideas, when they're taught by their high-school teachers."

Furthermore, Brower-Thomas—who is also co-director of Diversity & Culture of Inclusion for a new NSF Engineering Research Center: The Center for Quantum Networks—says it is important that she represented Historically Black Colleges and Universities (HBCUs) at the workshop. She says HBCUs produce the largest number of graduates from underrepresented groups in STEM who go on to receive their PhD degrees. "These are our future professors, the people who will be engaging the broader audience and getting young folks involved or interested. If they don't see someone who looks like them who's doing the work, they may not have in their mind that this is something they could contribute to."

Edwards agrees. When she and co-principal investigator Diana Franklin, from the University of Chicago, put in their proposal to develop "Q2Work," increasing women and minority representation at the college level was part of their goal. Their proposal was accepted last summer and the program is facilitating the National Q-12 Education Partnership.

The Q2Work website will serve as an aggregator of QIS education resources. Furthermore, their project will convene workshops with stakeholders who will develop steps to incorporate QIS education into existing standards of learning and curricula.

As they are just now at the beginning stages of contributing toward the development of the quantum education community, Edwards tells *MRS Bulletin* that their program can work on growing a quantum workforce that is inclusive and diverse. "Since QIS is young then we have a chance, as a community," she says, "to consider issues of inclusion and diversity and learn from the efforts of other fields, such that we can grow this diverse workforce successfully."

Judy Meiksin

EU announces European Green Deal €1 billion investment

The European Commission has launched a €1 billion (~USD1.2 billion) call for research and innovation projects that respond to the climate crisis and help protect Europe's ecosystems and biodiversity. The Horizon 2020-funded European Green Deal Call is expected to spur Europe's recovery from the coronavirus pandemic by turning green challenges into innovation opportunities.

Mariya Gabriel, Commissioner for Innovation, Research, Culture, Education and Youth, says, "With innovation at its heart, this investment will accelerate a just and sustainable transition to a climate-neutral Europe by 2050. As we do not want anyone left behind in this systemic transformation, we call for specific actions to engage with citizens in novel ways and improve societal relevance and impact."

Given the urgency of the challenges it addresses, this Green Deal Call aims for clear, discernible results in the short- to medium-term, but with a perspective of long-term change. There are fewer, but more targeted, larger and visible actions than previous calls, with a focus on rapid scalability, dissemination, and uptake.

The projects funded under this call are expected to deliver results with tangible benefits in 10 areas, including clean, affordable, and secure energy; industry for a clean and circular economy; energy and resource efficient buildings; and sustainable and smart mobility.

The call includes opportunities for international cooperation in addressing the needs of less-developed nations, particularly in Africa, in the context of the Paris Agreement as well as the UN Sustainable Development Goals.

The deadline for submissions is January 26, 2021, with selected projects expected to start in autumn 2021. □

https://doi.org/10.1557/mrs.2020.289 Published online by Cambridge University Press